

ABSTRACT

A pressure sensitive cursor control suitable for applications that include cellular phones and personal data assistants includes a pressure sensor array suitable to detect a human fingerprint. Cursor control is provided by subtle finger movement. Sequential images of the finger are captured and compared to determine planar movement or data entry. Performance may be improved by sampling zones within the captured image and comparing the zones with those in an earlier image. Performance could also be improved by subsampling the array. While the full resolution of the pressure-sensing array is needed to capture ones fingerprint and execute an authentication function only a subsampled image from the array is needed to derive meaningful navigation data. The pressure sensor array is designed on a glass substrate in order to drive down the unit cost. The silicon companion chip where the data is interpreted also drives the array and can therefore sub-sample the array when navigating and/or get a full resolution image when authenticating.